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10/697,108	10/31/2003	Werner Beisel	Q78137	8426

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EXAMINER	
LEE, SIU M	

ART UNIT	PAPER NUMBER
2611	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/697,108	BEISEL ET AL.	
	Examiner	Art Unit	
	SIU M. LEE	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 July 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *13-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 13-33 have been considered but are moot in view of the new ground(s) of rejection because of the amendment.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 13-19, 22-23, 24-30, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Corbalis et al. (US 6,882,766 B1) in view of Shimomura et al. (US 2002/0131116 A1) and Iwamoto et al. (US 5,790,520).

(1) Regarding claims 13 and 24:

Corbalis et al. discloses a Clos switch fabric 60 in figure 5 comprising a plurality of modules (input stage switches 76, center stage switches 86, and output stage switches 96 in figure 5), including at least one input stage (plurality of input stage 70 comprising 1000 input stage each of the input stage comprising DET 72, input stage switch 76, and DET 74), and a plurality of internal stage (center stage 80 comprising 16 tap 87 and center stage switch 86);

said at least one input module and said plurality of internal modules being interconnected (all the input stage switches 76, center stage switches 86, and output stage switches 96 in figure 5 are interconnected as shown in figure 5);

said at least one input module comprising:

means for receiving an external communication input signal (each of the input stage switched 76 receives eight working input IN 1-1 through IN 1-8, column 5, lines 49-51);

means for monitoring said external communication signal for defects (input stage comprising DET 72 and DET 74 for monitoring optical signal, column 6, lines 14-20);

at least one of said plurality of internal modules comprising:

means for receiving an internal signal form one of the plurality of modules (each of the center stage switch 86 receives signal from each of the input stage switch 76), and

means for monitoring said received internal signal (each of the center stage switches 86 of switch fabric 60 includes an internal optical tap 87 that allows substantially noninvasive real-time monitoring of any of the optical signal, column 6, lines 7-10).

Corbalis et al. fails to disclose (a) means for squelching said external communication input signal entirely such that said squelching can be detected by amplitude or frequency detection without bit or byte analysis when a defect is detected and input module means for outputting said squelched external communication input signal as an internal signal when a defect is detected and

(b) the internal optical tap 87 for monitoring whether said receive internal signal is squelched.

With respect to (a), Shimomura et al. discloses an optical signal deterioration monitor (OADM) that when a fault is detected, it will control the gates to cut off signal light from an output corresponding to the defect input to convert the detected fault signal into an optical indication signal (AIS-O)(squelch signal) (paragraph 0020) (that is the optical indication signal will contain zero power and squelch the entire signal such that said squelching can be detected by amplitude detection without bit or byte analysis), it is inherent that the input stage switch will output the optical alarm indication signal (AIS-O) when a defect is detected by the monitoring system (paragraph 0022).

It is desirable to have means for squelching said external communication input signal entirely such that said squelching can be detected by amplitude or frequency detection without bit or byte analysis when a defect is detected and input module means for outputting said squelched external communication input signal as an internal signal when a defect is detected because the signal processing is simplified since no signal information can be easily detected (paragraph 0022, lines 7-13). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to employ the teaching of Shimomura et al. in the device of Corbalis et al. to simplify the monitoring and the alarm indication process.

With respect to (b), Iwamoto et al. discloses that a monitoring device (add drop multiplexer) that monitor for an AIS signal and when AIS signal is detected, the path switch 14 is changed (column 4, lines 34-37).

It is desirable to have the internal optical tap 87 for monitoring whether said receive internal signal is squelched because it prevents data lost. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to employ the teaching of Iwamoto et al. in the detectors of Corbalis et al. and Shimomura et al. to improve the reliability of the device.

(2) Regarding claim 14 and 25:

Corbalis et al. discloses that the Clos multistage architecture as shown in figure 5 is for providing redundancy for the communication system and add redundancy to a strict-sense nonblocking CLOS (column 3, lines 34-37, 64-65), therefore, it is well known in the art that a redundancy communication system will output said external communication input signal as an internal signal when a defect is not detected (as teach by Iwamoto et al. in discussion on claim 19).

(3) Regarding claims 15 and 26:

Corbalis et al. and Shimomura et al. disclose all subject matter as discussed in claim 13 and Corbalis et al. further discloses wherein said at least one of said plurality of internal modules comprises means for receiving a redundant internal signal from another one of said plurality of modules (each of the center stage switches 86 receives a redundant signal from input stage switches 76 as shown in figure 5) (the device in figure 5 is for providing redundancy and provide capability both working and protection connection with

strict sense non-blocking, column 3, lines 34-43) and an internal optical tap 87 that allows substantially noninvasive real-time monitoring of any of the optical signal.

Corbalis et al. and Shimomura et al. fails to explicitly disclose internal module means for outputting said redundant internal signal as an internal signal when said received internal signal is detected as squelched.

However, Iwamoto et al. discloses that a add drop multiplexer that when an AIS signal is detected, the path switch 14 is changed and thereby, the working line is switched to the protection line (column 4, lines 34-37) (the examiner interpret the protection line is the redundant internal signal).

It is desirable to have internal module means for outputting said redundant internal signal as an internal signal when said received internal signal is detected as squelched because it provides redundancy to the communication system and prevent data lost. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to employ the teaching of Iwamoto et al. in the device of Corbalis et al. and Shimomura et al. to improve the reliability of the device.

(4) Regarding claims 16 and 27:

Corbalis et al. discloses that the Clos multistage architecture as shown in figure 5 is for providing redundancy for the communication for strict sense of non-blocking (column 3, lines 34-37, 64-65), therefore, it is well known in the art that a redundancy communication system will output said external communication input

signal as an internal signal when a defect is not detected (as teach by Iwamoto et al. in discussion on claim 19).

(5) Regarding claims 17 and 28:

Corbalis et al. discloses said at least one of said plurality of internal modules monitor said received internal signal for defects (column 6, lines 13-15).

Iwamoto et al. further discloses that a add drop multiplexer that when an AIS signal is detected, the path switch 14 is changed and thereby, the working line is switched to the protection line(column 4, lines 34-37); in case the AIS is not detected, the changing operation of the path switch is not carried out (column 4, lines 51-55).

It is desirable to have internal means for outputting said redundant internal signal as an internal signal when a defect is detected, and outputs said received internal signal as an internal signal when a defect is not detected and said received internal signal is not detected as squelched because it provides redundancy to the communication system and prevent data lost. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to employ the teaching of Iwamoto et al. in the device of Corbalis et al., Shimomura et al. to improve the reliability of the device.

(6) Regarding claims 18, and 29:

Corbalis et al. further wherein said plurality of modules further include at least one output module (output stage switches 96 in figure 5);

said output module comprising:

means for receiving an internal signal from one of said plurality of internal modules (each output stage switches 96 receives an input from center stage switches 86 as shown in figure 5);

means for monitoring the received signal from the center stage switches 86 (DET 92 in figure 5, column 6, lines 16-18);

means for receiving a redundant internal signal from another one of plurality of internal modules (each output stage switches 96 receive a redundant input from center stage switches 86 (1-16) as shown in figure 5);

output module for outputting a signal (as shown in figure 5).

Corbalis et al. and Shimomura et al. fail to disclose the DET 92 in figure 5 comprising means for monitoring whether said received internal signal is squelched and outputting said redundant internal signal as an output signal when said received internal signal is detected as squelched.

However, Iwamoto et al. further discloses that a add drop multiplexer that when an AIS signal is detected, the path switch 14 is changed and thereby, the working line is switched to the protection line (column 4, lines 34-37); in case the AIS is not detected, the changing operation of the path switch is not carried out (column 4, lines 51-55).

It is desirable to have DET 92 in figure 5 comprising means for monitoring whether said received internal signal is squelched and outputting said redundant internal signal as an output signal when said received internal signal is detected as squelched because it provides redundancy to the communication system and prevent data lost. Therefore, it would have been obvious to one of ordinary skill

in the art at the time of invention to employ the teaching of Iwamoto et al. in the DET 92 of Corbalis et al., Shimomura et al. and Ishiwatari to improve the reliability of the device.

(7) Regarding claims 19 and 30:

Iwamoto et al. further discloses in case the AIS is not detected, the changing operation of the path switch is not carried out (column 4, lines 51-55) (by not switching the path to protection path, the received internal signal will be output).

It is desirable to have output module means for outputting said received internal signal as an output signal when said received signal is not detected as squelched because it provides redundancy to the communication system and prevent data lost. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to employ the teaching of Iwamoto et al. in the device of Corbalis et al., Shimomura et al. and Ishiwatari to improve the reliability of the device.

(8) Regarding claim 22:

Corbalis et al. discloses wherein said system is a cross-connect device (device in figure 5 is cross connected as shown in figure 5) and wherein at least one of said plurality of internal modules is a switching matrix component (switch matrix 60 in figure 5, column 7, lines 5).

(9) Regarding claims 23 and 33:

Shimomura et al. further discloses wherein a squelched signal comprises a zero signal (monitoring system has a function of converting a fault signal into

the optical alarm indication signal (AIS-O) in an optical layer by cutting off the signal light from an output corresponding to the fault detection signal detected (paragraph 0022, lines 1-6); the examiner interpret an optical signal without light as a zero signal).

4. Claims 20 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Corbalis et al. (US 6,882,766 B1) in view of Shimomura et al. (US 2002/0131116 A1) and Iwamoto et al. (US 5,790,520) as applied to claims 13 and 24 above, and further in view of Feinberg et al. (US 2002/0167694 A1).

Corbalis et al., Shimomura et al. and Iwamoto et al. disclose all subject matter as discussed in claims 13 and 24 except wherein at least one of said monitoring means comprises a threshold detector.

However, Feinberg et al. discloses a monitoring means comprises a threshold detector (the processor 240 in figure 2 determine if the signal output by the photodiode 220 is below a threshold level, if it is below a threshold level, it indicates that there is a problem on the path and switch between service and protection path, paragraph 0025, lines 7-13).

It is desirable to have the monitoring means comprises a threshold detector because it can detect failure of a service path by the photodiode is very fast since there are few if any propagation delay, paragraph 0045, lines 2-6). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to employ the teaching of Feinberg et al. in the system of

Corbalis et al., Shimomura et al. and Iwamoto et al. to improve the reliability of the device.

5. Claims 21 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Corbalis et al. (US 6,882,766 B1) in view of Shimomura et al. (US 2002/0131116 A1) and Iwamoto et al. (US 5,790,520) as applied to claims 13 and 24 above, and further in view of Fee (US 6,285,475 B1).

Corbalis et al., Shimomura et al. and Iwamoto et al. disclose all subject matter as discussed in claims 13 and 24 except wherein at least one of said monitoring means comprises a frequency detector.

However, Fee discloses wherein said monitoring means comprises a frequency detector (signal detector 680 in figure 6A include a tone detector tuned to the subcarrier modulation frequency to selectively determine the presence of the monitoring signal 610 (a subcarrier signal 610 may range from 1KHz to 10KHz), column 9, lines 24-26, lines 49-58).

It is desirable to have the monitoring means comprises a frequency detector because by detecting the sub-carrier signal, fault can be determined reliably and cheaply (column 6, lines 43-44). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to employ the teaching of Fee in the system of Corbalis et al., Shimomura et al. and Iwamoto et al. to improve the reliability and lower the cost of the device.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Waverka (US 2004/0208551 A1) discloses an optical wavelength cross connect architectures using wavelength routing elements.

Frannhagen et al. (US 2002/0181490 A1) discloses a method and apparatus for line and path selection within sonet /SDH based networks.

Nishimura (US 5,491,696) discloses a synchronous/asynchronous system having function of switching path upon fault.

Lundh et al. (US 6,195,758 B1) discloses an operation and maintenance of clock distribution networks having redundant.

Binz et al. (US 5,065,454) disclose a clock distributor.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be

calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SIU M. LEE whose telephone number is (571)270-1083. The examiner can normally be reached on Mon-Fri, 7:30-4:00 with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on (571) 272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Siu M Lee/
Examiner, Art Unit 2611

10/22/2008

/Chieh M Fan/

Supervisory Patent Examiner, Art Unit 2611